Injuries common to tactical personnel (A multi-disciplinary review)

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TSAC AUSTRALIA

Evidence Based | Tactically Tested | Operationally Proven

Injuries common to tactical personnel (A multi-disciplinary Review)

Dr Rob Orr and SGT Mick Stierli

BLUF

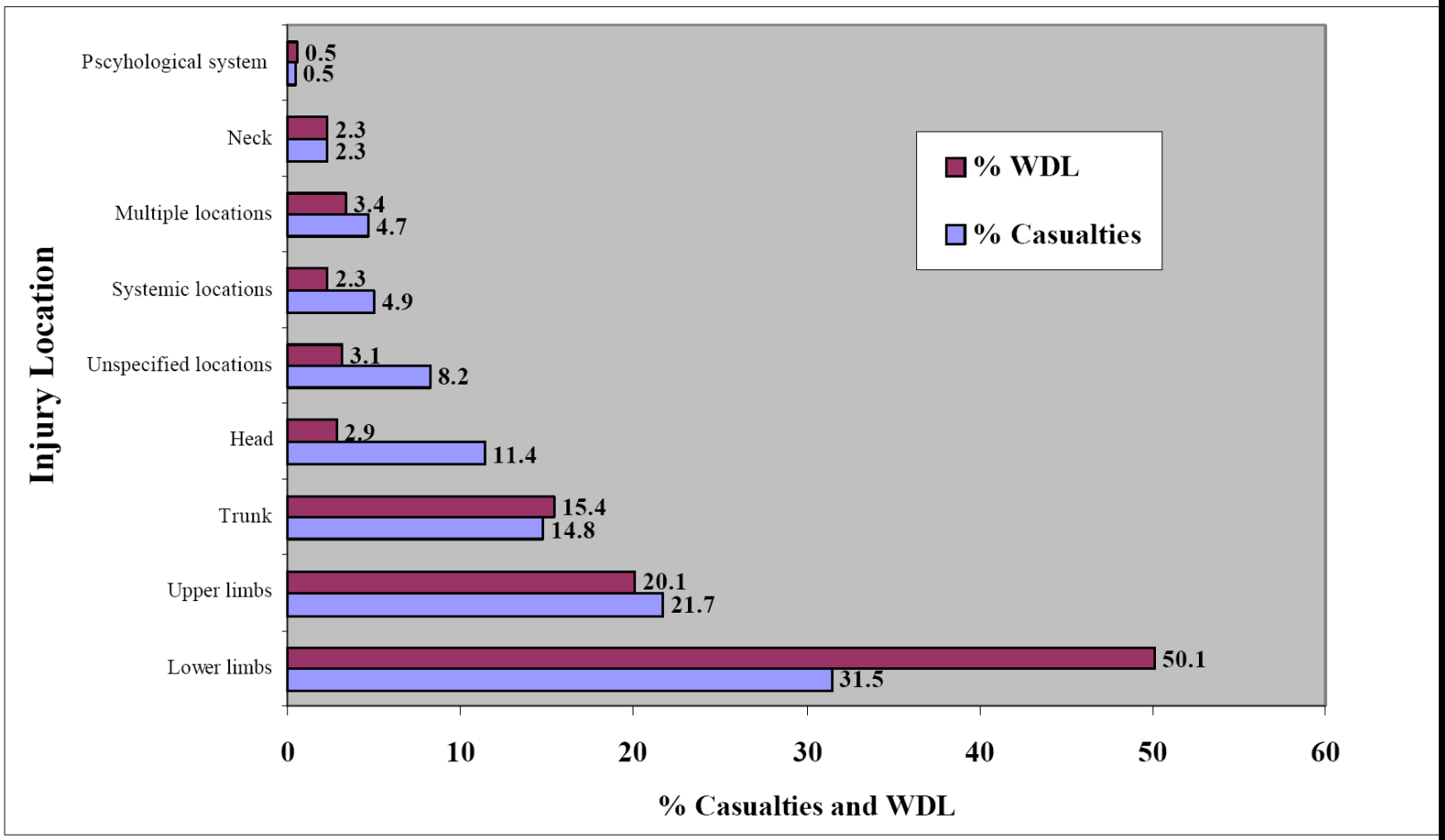
Tactical personnel are exposed to a variety of occupational and workplace specific hazards that can cause injuries

The lower limbs and lower back are prone to injuries in both Military and Police populations although some variation in mechanism and upper limb prevelence between populations must be noted

Injuries in the ADF

Source: Department Media

Sites of Injury – ADF



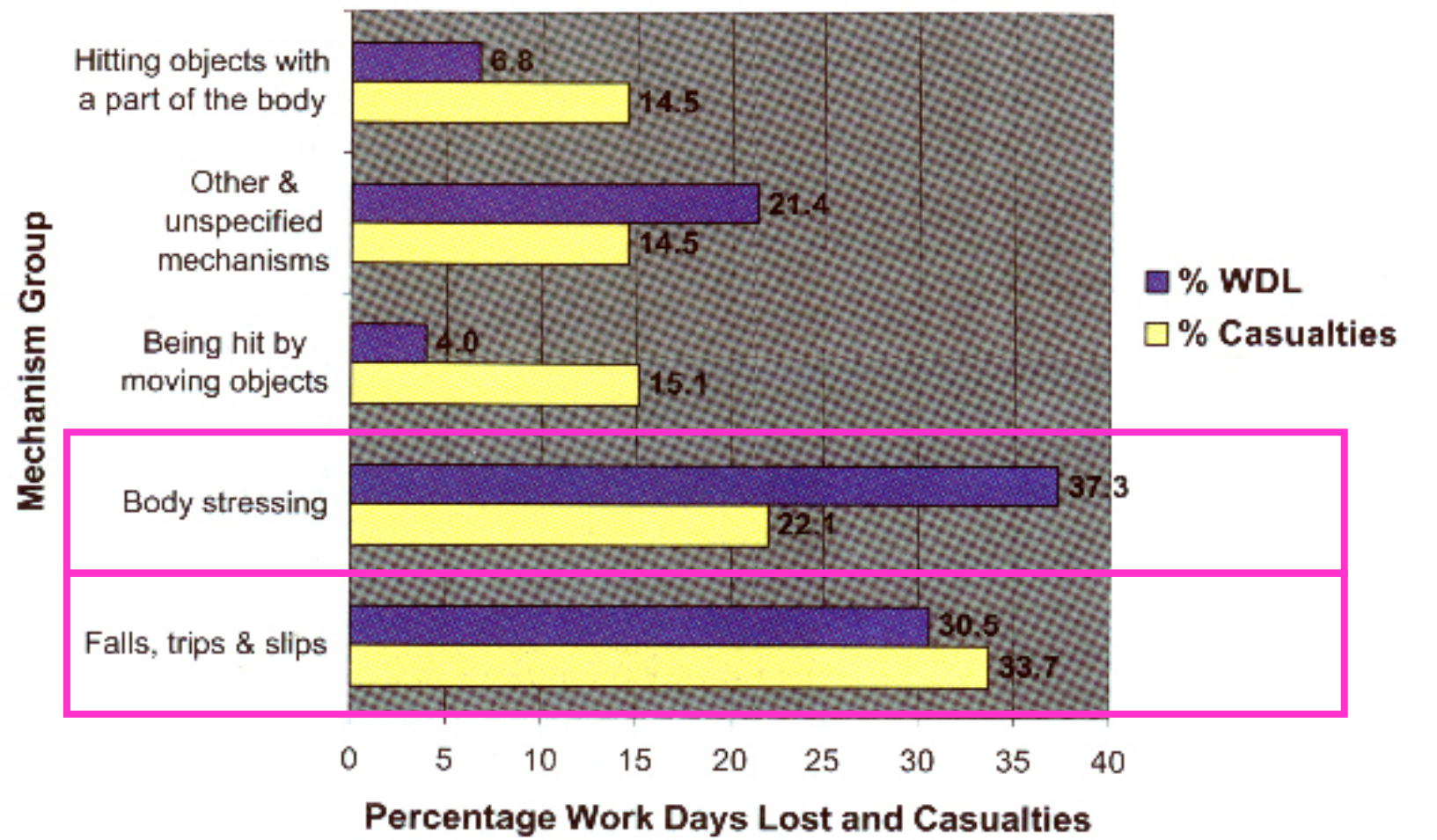
Source: Department of Defence, 2000, *ADF Health Status Report* ,Defence Publishing Service, ACT

Sites of Injury – ADF

Location Group	Casualties	%
Lower limbs	1586	31.5
Upper limbs	1095	21.7
Trunk (includes back)	745	14.8
Head	574	11.4
Unspecified locations	414	8.2
Systemic locations	249	4.9
Multiple locations	237	4.7
Neck	115	2.3
Psychological system	23	0.5

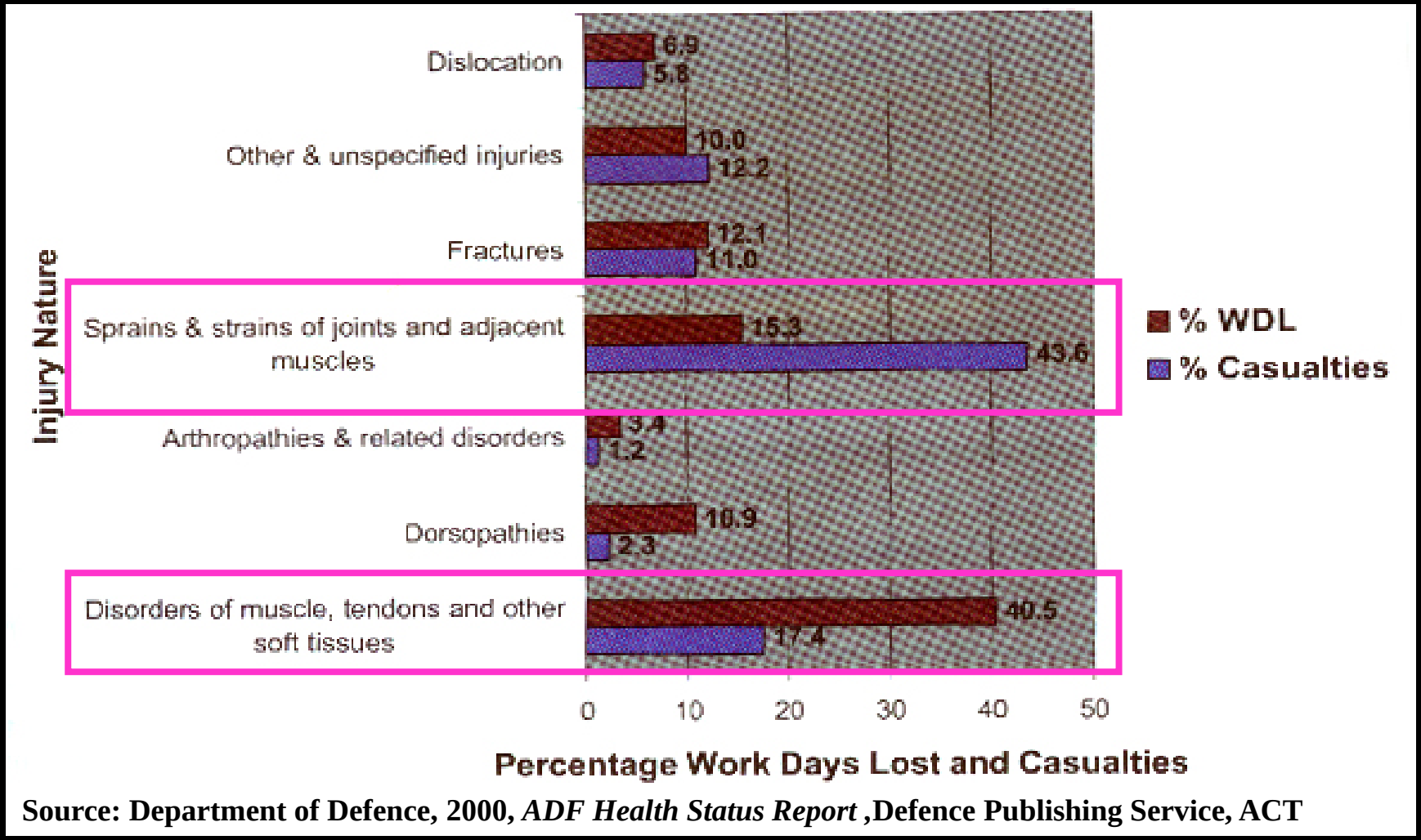
Source: Department of Defence, 2000, *ADF Health Status Report* ,Defence Publishing Service, ACT

Mechanism of Injury – ADF



Source: Department of Defence, 2000, *ADF Health Status Report* ,Defence Publishing Service, ACT

Nature of Injury – ADF



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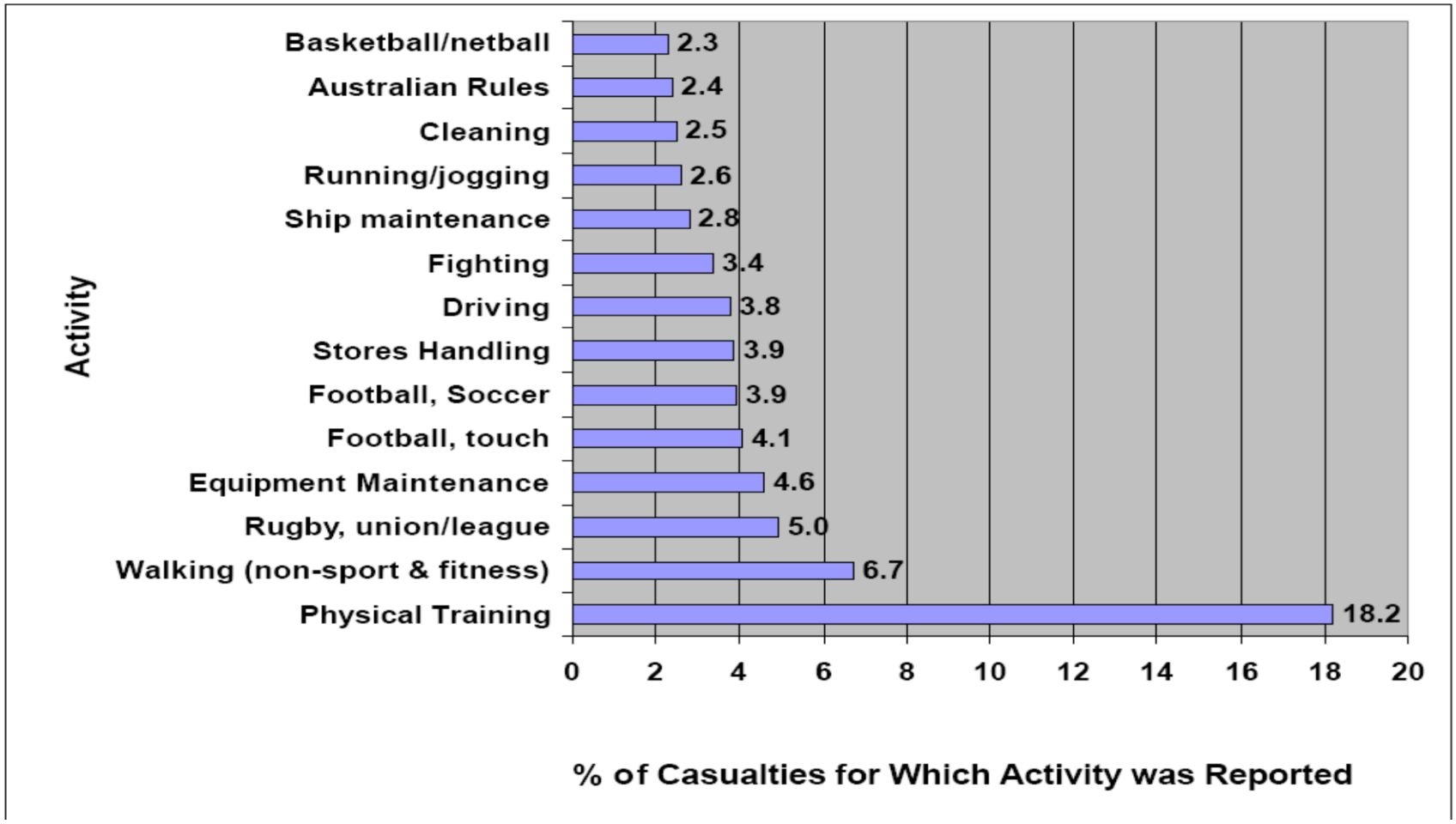
Activity when Injured – ADF



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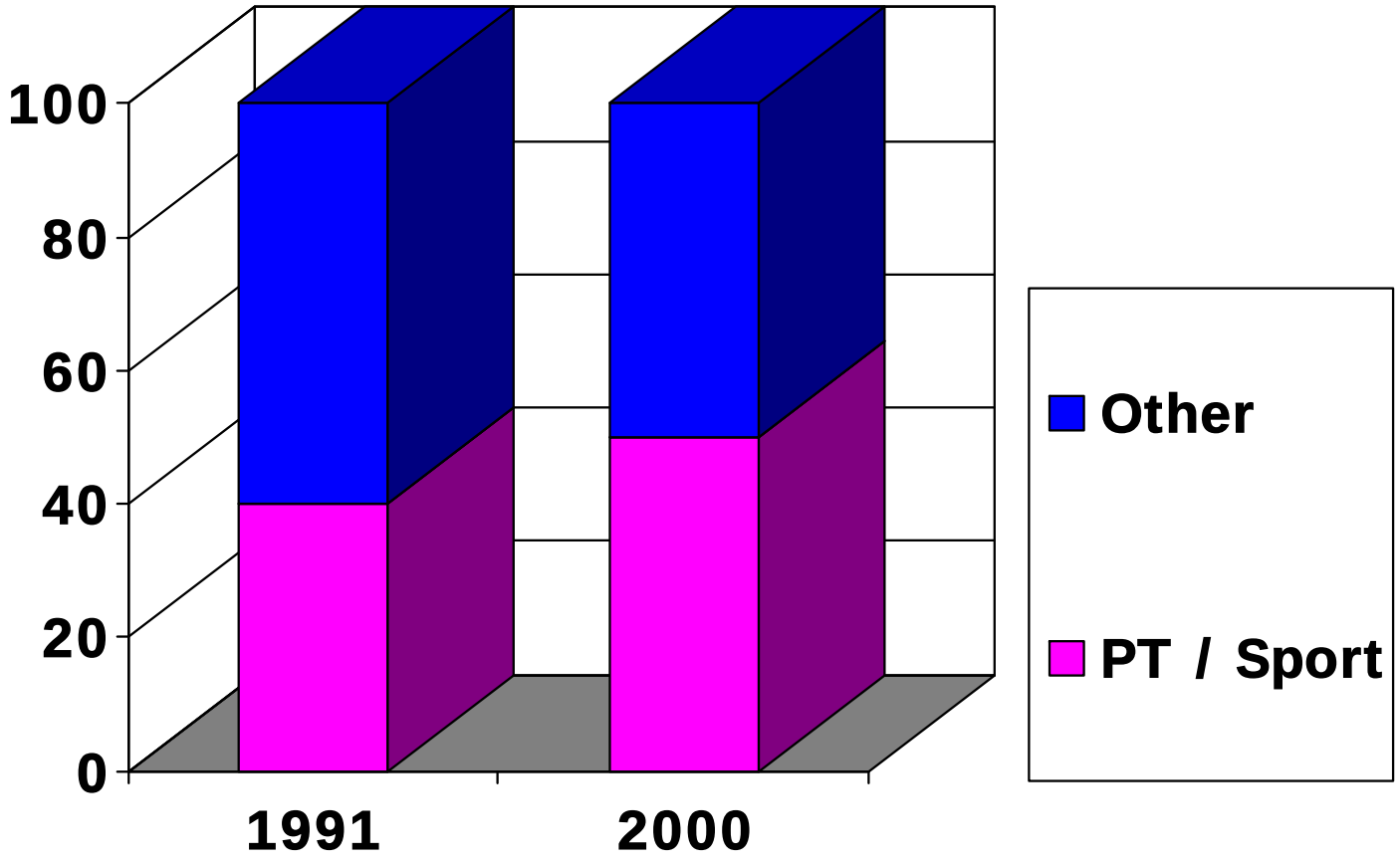
Activity when Injured – ADF

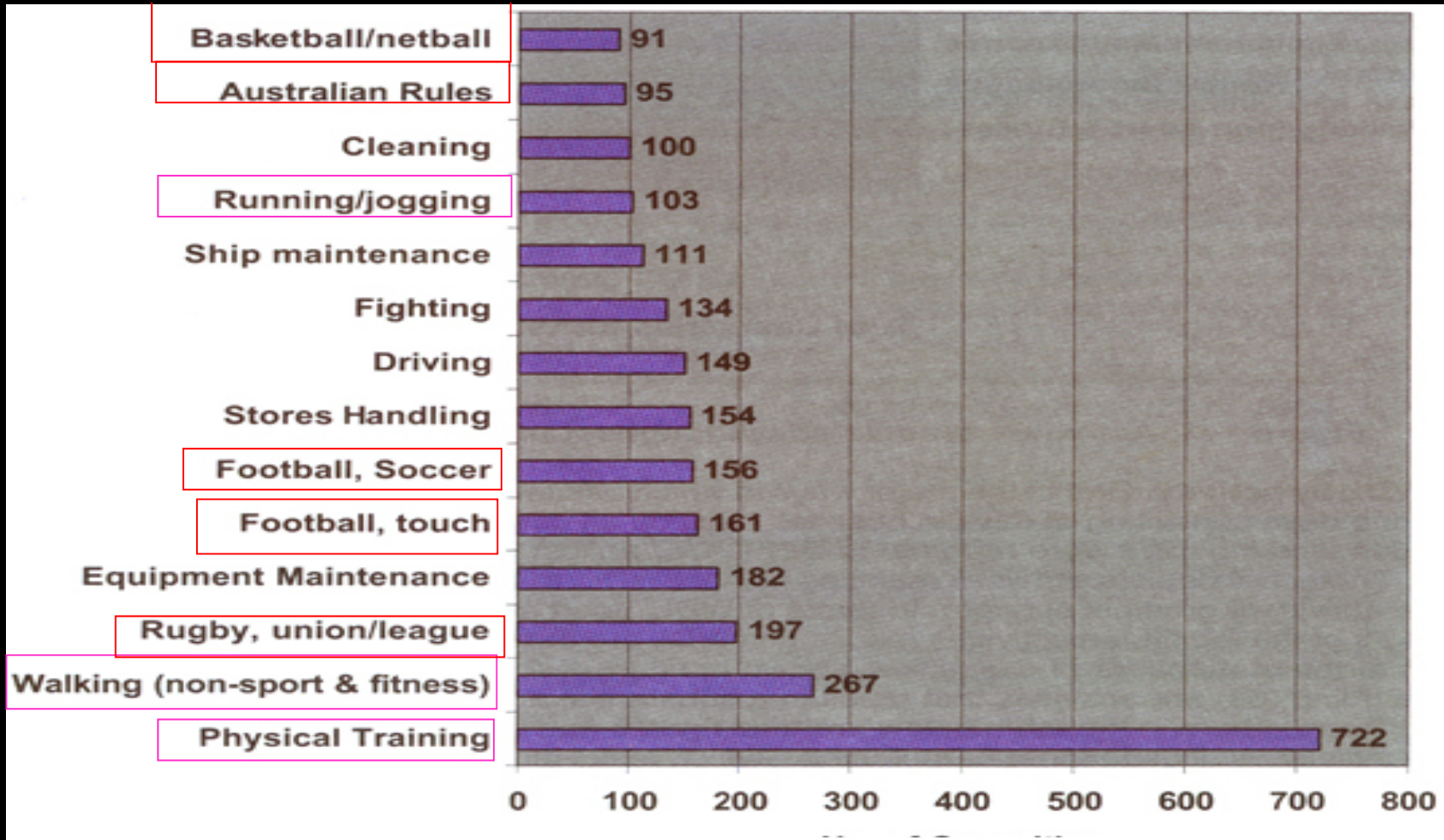


Activity when Injured – ADF

Physical training is linked to the highest number of working days lost, hospital admissions, sick and light duties days. Sporting injuries are another significant factor.

Senate Committee Hansard 17 Aug 2004

Activity when Injured – ADF



Source: Department of Defence, 2000, *ADF Health Status Report* ,Defence Publishing Service, ACT

Trainees – ARMY

- Recruits typically report 3-5 times the rates of injury reported by trained ADF personnel
  - lower skill and experience levels, low levels of personal control, high training tempos and constant group training and fixed workloads contribute strongly to this situation, which is common across industries for new recruits
- This is similar to military trainees of other nation

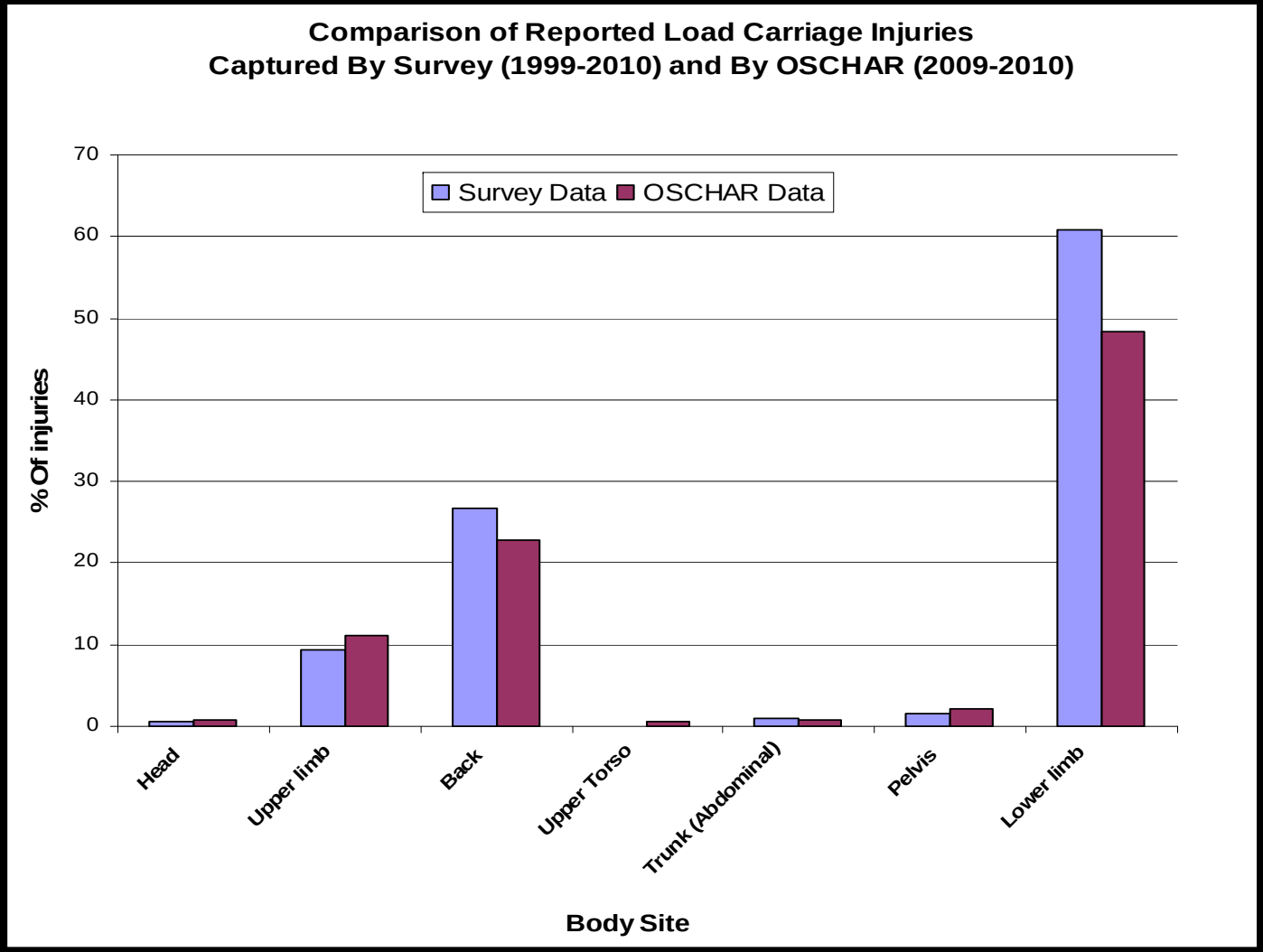
Different Corps

- Different Corps have different exposures to military task requirements (eg Load Weight carried – Orr, 2012)

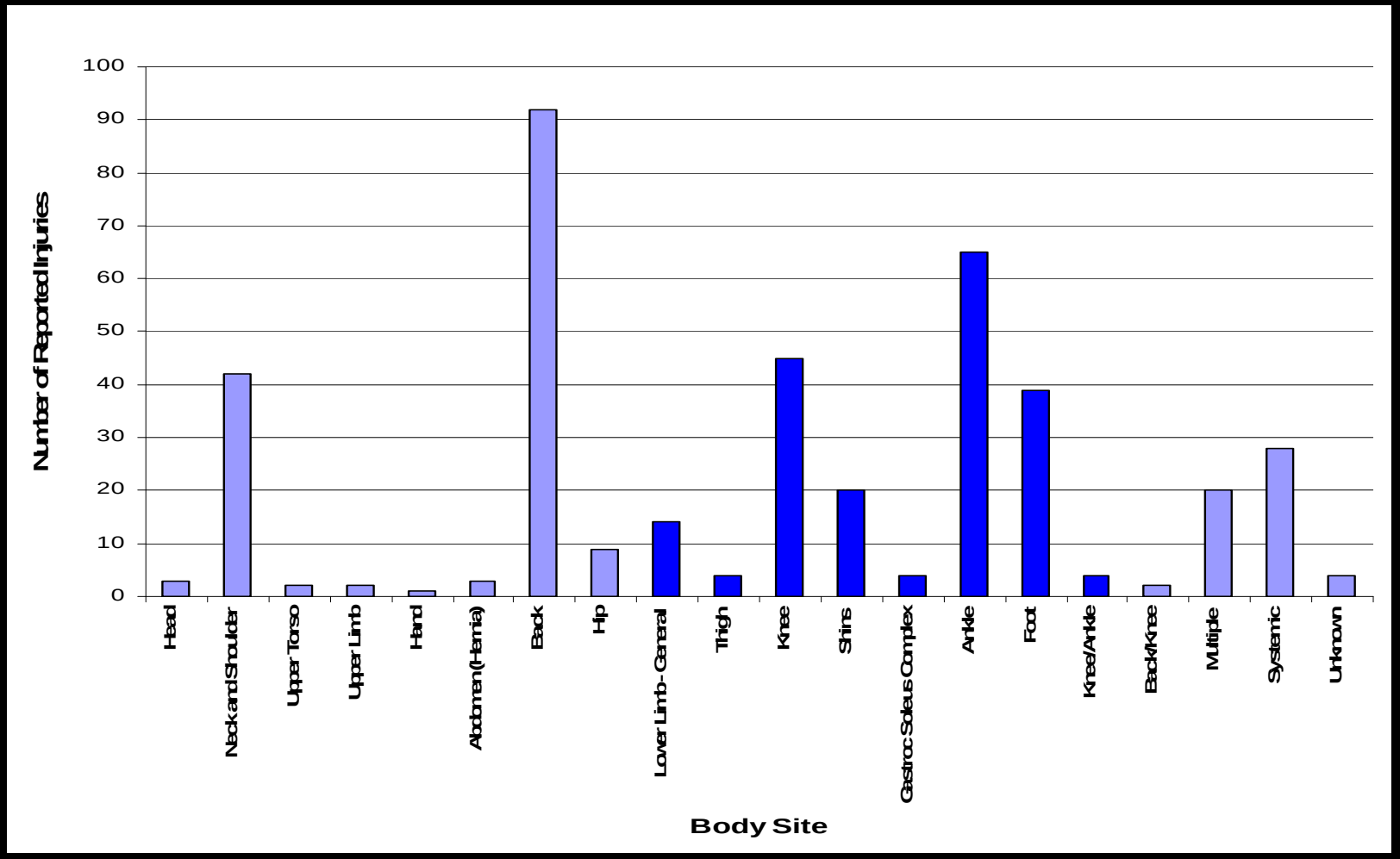
Different Corps

- Review of musculoskeletal injuries sustained by Air Defence Artillery
  - Back injuries significantly more than other injuries
  - Followed by patella and knee ligament, neck and ankle

Different Tasks – Load Carriage



Different Tasks – Load Carriage



Different Tasks – Load Carriage

- 39% Bones & Joints
- 36% Tendons & Muscles
- 15% Ligaments
- 4% Skin

Different Tasks – Load Carriage

14%

28%

38%

Different Tasks – Load Carriage

Mechanism of Load Carriage Injuries	Number of reported injuries (%)	
Muscular stress	251	62%
Fall	85	21%
Exposure to environmental heat	28	7%
Rubbing and chafing	21	5%
Stepping kneeling or sitting on objects	9	2%
Unspecified mechanisms of injury	3	1%
Contact with moving or stationary object	4	1%
Other and multiple mechanisms of injury	2	0%
Being trapped between stationary and moving object	1	0%
TOTAL	***404***	***100%***

Defence Injury Wrap

- The lower limbs and back are common injury sites
- Nature of injuries are wide and varied from blisters to nerve injuries
- Conditioning and Reconditioning practices need to consider:
  - The sites more prone to injury
  - The corps and tasks required of the individual

Injuries in the Police Force

Injuries to Police Officers

- Police undertake a complex and varied job.
- Job details can change minute to minute, hour to hour and day to day.
- Play doesn't stop!

What's the Problem?

- Common injury sites in law enforcement

Impact of Injuries

- Acute injuries can have a significant impact on your partner, the tactical team or the operation.

Tactical Options Model

Use of Force Concepts

Control Theory

The ultimate goal is control of the situation.
You need advantage for control.
Evaluate the propensity for control –v- injury (reasonable force).
Ability to disengage, de-escalate the situation or respond to escalation is imperative

Officer/Subject Factors

Age
Gender
Size
Fitness
Skill Level
Multiple Officers/Subjects

Special Circumstances

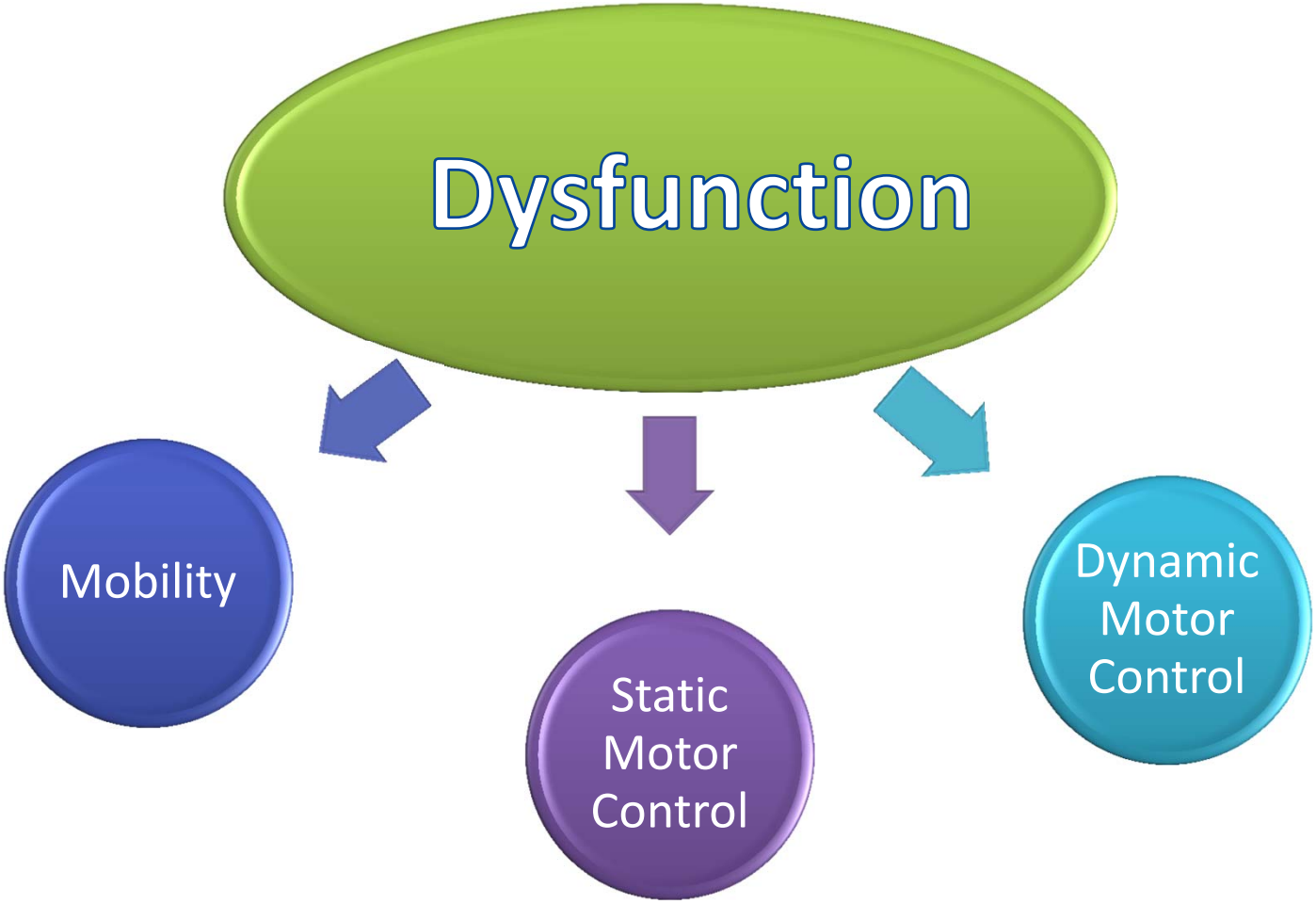
Proximity to a Weapon
Special Knowledge
Injury or Exhaustion
Ground Position
Disability
Imminent Danger
Drugs/Alcohol
Mental State

TACTICAL STRENGTH & CONDITIONING AUSTRALIA

Injuries to Police officers (Jul 09-Jun 12)

EVIDENCE BASED . TACTICALLY TESTED . OPERATIONALLY PROVEN

Musculoskeletal Screening


Dysfunction
Mobility
Static Motor Control
Dynamic Motor Control

FMS Average Scores

Police officer weak points

Police Injury Wrap

- The lower limbs, back and Upper limbs are all common injury sites
- There is a link between the sites of movement dysfunction in police officers and sites typically injured.
- Conditioning and Reconditioning practices need to consider:
  - The sites more prone to injury
  - The role and tasks required of the individual

Questions?

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